



New records of *Pristidactylus nigroiugulus* Cei, Scolaro & Videla, 2001 (Squamata: Leiosauridae) with a geographic distribution map

Luciano J. Avila, Ignacio Minoli, Cristian H.F. Pérez¹, M. Andrea González Marín & Mariana Morando

Grupo de Herpetología Patagónica, IPPEC-CONICET, Boul. Almt. G. Brown 2915, U9120ACD, Puerto Madryn, Chubut, Argentina

¹Corresponding author. E-mail: chfperez@cenpat-conicet.gob.ar

Abstract: We provide new geographic records for *Pristidactylus nigroiugulus* Cei, Scolaro & Videla, 2001 from Argentina. We present the first record for Santa Cruz province and the southernmost records of the species based on lizards collected in the austral summers of 2012/2013 and 2013/2014. Based on a museum specimen, we extend the species distribution to the eastern part of the Somuncurá Plateau. An updated distributional map is included.

Key words: range extension; Leiosauridae; Central Patagonia; Argentina

Leiosaurid lizards are widely distributed in South America from southern Amazonia to southern Patagonia, through the Cerrado, Atlantic Forest, Monte and Chaco biomes (POUGH et al. 2015). These lizards are terrestrial, arboreal, or rock-dwelling, with a maximum size of 130 mm snout-vent length (SVL), and poorly studied in comparison to other iguanians. Within leiosaurids, *Pristidactylus* Fitzinger, 1843 is the genus having the most species, with ten recognized, but some of these have very small distributional ranges in the Córdoba and Ventana mountains, central and northern Patagonian steppes as well as in the pre-Andean ranges of western Argentina and central Chile. *Pristidactylus nigroiugulus* Cei, Scolaro & Videla 2001 (Figure 1) is the southernmost distributed species and has the largest geographic distribution of any *Pristidactylus* species. It was described from the foothills of Sierra Negra plateau in central Patagonia and is a medium-sized lizard (SVL = 100 mm) with a pronounced sexual dichromatism (CEI et al. 2001; CEI et al. 2004; SCOLARO 2005). Originally, *P. nigroiugulus* was known only from a small number of occurrences in southern Río Negro province and northern and central areas of Chubut province (CEI et al. 2001; AVILA et al. 2003), but later MINOLI & AVILA (2011) extended its geographic range to include the Chico river basin, central-eastern Chubut province.

In the austral summer of 2012/2013 we made a herpetofauna study on the oil fields of the Golfo San Jorge Management Unit of Pan American Energy (UG-GSJ). The



Figure 1. *Pristidactylus nigroiugulus*. **A.** Male (LJAMM-CNP 15588). Photographed in the wild at the collection site, **B.** Female, (LJAMM-CNP 14908). Photographed in captivity, five days after capture. Photos by L.J. Avila.

study area is located between the Chico and Deseado rivers. Later, in the summer of 2013/2014, we made a second survey in the Sierra del Castillo mountains, north of the Chico river. This allowed us to survey and collect lizards in previously unsampled sectors of Chubut and Santa Cruz provinces. As part of this study, we reviewed samples of *P. nigroiugulus* deposited in the Luciano Javier Avila Mariana Morando–Centro Nacional Patagónico (LJAMM-CNP)

collection and found a specimen that represents a significant geographic extension north to Río Negro province. All lizards were collected by noose or hand, kept alive in plastic bottles, and transported to the lab. At each collection site we recorded latitude, longitude, and elevation by a Garmin® GPS receiver. Animals were euthanized at the

laboratory by a pericardic injection of sodium thiopental Abbot® or Pentovet®, fixed in 20% formalin, and stored in 70% ethanol (standard herpetological procedures according to Simmons 2002). Tissue samples of liver and muscle were taken from collected animals. L. Elizalde donated a juvenile lizard from UG-GSJ collected in a pitfall trap

Table 1. Specimens of *Pristidactylus nigroiugulus* studied in this work, including voucher numbers and geographic data. Site codes correspond to numbers on the map (Figure 2).

Province/ site code	Department	Locality	Voucher number	Geographic coordinates	Altitude (m)
Río Negro					
1	25 de Mayo	National Road 23, 14 km W Aguada de Guerra	LJAMM-CNP 3090	41.010° S, 068.506° W	866
2	25 de Mayo	Provincial Road 5, 40 km SE Maquinchao	LJAMM-CNP 3089	41.502° S, 068.554° W	887
3	Valcheta	Trail to Somuncurá Plateau, 14.5 km NW Luis Ovejero Post	LJAMM-CNP 3308	41.566° S, 066.612° W	975
4	25 de Mayo	Provincial Road 5, 8.9 km SE El Cain	LJAMM-CNP 3382	41.689° S, 068.066° W	1019
Chubut					
5	Telsen	Provincial Road 4, 65.5 km W Telsen	LJAMM-CNP 5666	42.367° S, 067.656° W	966
6	Telsen	Provincial Road 4, 60.4 km W Telsen	LJAMM-CNP 5505	42.376° S, 067.595° W	941
7	Telsen	Provincial Road 4, 70.7 km W Telsen	LJAMM-CNP 5638, 5639	42.382° S, 067.712° W	1016
8	Telsen	Provincial Road 67, 17.7 km N Gan Gan (2 km junction to Cañada Leona)	LJAMM-CNP 3409	42.405° S, 068.257° W	1066
9	Gastre	Cerro Navidad Sector, Navidad Mining Project, 3 km S Provincial Road 4, 40 km W Gan Gan	LJAMM-CNP 6104, 6105	42.414° S, 068.821° W	1219
10	Telsen	Provincial Road 67, 19.7 km N Gan Gan	LJAMM-CNP 3839	42.417° S, 068.249° W	1076
11	Telsen	Provincial Road 67, 21.6 km N Gan Gan	LJAMM-CNP 6254	42.421° S, 068.277° W	1100
12	Telsen	Provincial Road 67, 15.1 km N Gan Gan	LJAMM-CNP 6757	42.423° S, 068.287° W	1012
13	Telsen	Provincial Road 67, 16 km N Gan Gan	LJAMM-CNP 6903, 6904	42.424° S, 068.285° W	1009
14	Telsen	Provincial Road 67, 13.8 km N Gan Gan	LJAMM-CNP 6762	42.425° S, 068.289° W	1038
15	Telsen	Provincial Road 67, 3.7 km N from 3412 locality (N Gan Gan)	LJAMM-CNP 3417	42.428° S, 068.303° W	1002
16	Cushamen	Rock boulders on the roadside of Provincial Road 13	UNMDP 525	42.433° S, 069.683° W	871
17	Gastre	Aguada Oveja Muerta Sector, Navidad Mining Project, 3 km S Provincial Road 4, 40 km W Gan Gan	LJAMM-CNP 6045	42.440° S, 068.805° W	1146
18	Telsen	10 km N Gan Gan, first junction from Provincial Road 67	LJAMM-CNP 3840-3843	42.445° S, 068.311° W	968
19	Telsen	Foothills Sierra Negra Plateau	MACN 37092-3, JMC-DC 1196-97, MCZ RI82882, RI82883, IBA-UNC R1477, CH-IADIZA 288, 290, JAS-DC 594	42.450° S, 066.845° W	880
20	Telsen	Provincial Road 67, 7.9 km N Gan Gan (Junction to De mi Car Ranch)	LJAMM-CNP 3406	42.453° S, 068.313° W	952
21	Telsen	Provincial Road 67, 10 km N Gan Gan	LJAMM-CNP 6760-6761	42.456° S, 068.313° W	945
22	Telsen	Provincial Road 4, 85 km W Telsen	LJAMM-CNP 5603-5605	42.468° S, 067.850° W	1051
23	Telsen	Provincial Road 4, 15.3 km E Gan Gan	LJAMM-CNP 5669	42.526° S, 068.105° W	901
24	Telsen	Provincial Road 4, 2 km E Gan Gan	LJAMM-CNP 5508	42.528° S, 068.018° W	922
25	Gastre	Provincial Road 58, 3.2 km N El Escorial	LJAMM-CNP 12179	43.062° S, 068.547° W	822
26	Languiñeo	Six Brothers Ranch, 10 km N NE junction National Road 25, trail to Provincial Road 62, Pocitos de Quichaura	LJAMM-CNP 13090	43.439° S, 070.003° W	743
27	Paso de Indios	Paso de Indios, South of Río Chubut	MHNG 2146-39, 2146-40	43.864° S, 069.046° W	1000
28	Paso de Indios	Callejas Post, Canquel Plateau	IBA-UNC 934	43.977° S, 068.7142° W	489
29	Paso de Indios	Road Sombrero-Paso de Indios	IBA-UNC 784	44.123° S, 068.401° W	489
30	Paso de Indios	Provincial Road 27, 14.2 km S El Sombrero and Provincial Road 53	LJAMM-CNP 3897	44.259° S, 068.259° W	467
31	Paso de Indios	Provincial Road 27, 78.1 km S El Sombrero and Provincial Road 53	LJAMM-CNP 3900-3904	44.588° S, 067.896° W	311
32	Escalante	Provincial Road 27, 46.5 km S junction Provincial Road 29 (towards Garayalde)	LJAMM-CNP 3888	44.935° S, 068.026° W	373
33	Sarmiento	La Juanita Ranch, Castillo Hills, 5 km W Provincial Road 24, 58 km N Sarmiento	LJAMM-CNP 15588	45.139° S, 069.173° W	416
34	Sarmiento	San Jorge Gulf Operation Area, Pan American Energy	LJAMM-CNP 15333	45.808° S, 068.992° W	497
35	Sarmiento	Road from Colonia Sarmiento to El Chulengo post, 1 km N Junction to Petrified Forest, Sarmiento and Cerro Guacho, 25 km S Colonia Sarmiento	LJAMM-CNP 14934	45.908° S, 069.155° W	456
Santa Cruz					
36	Deseado	Basaltic outcrop, Zanjón del Valle Hermoso, 14 km SE Anticlinal Grande Base by road to Meseta 14 oil rig field	LJAMM-CNP 14908	46.017° S, 068.945° W	397

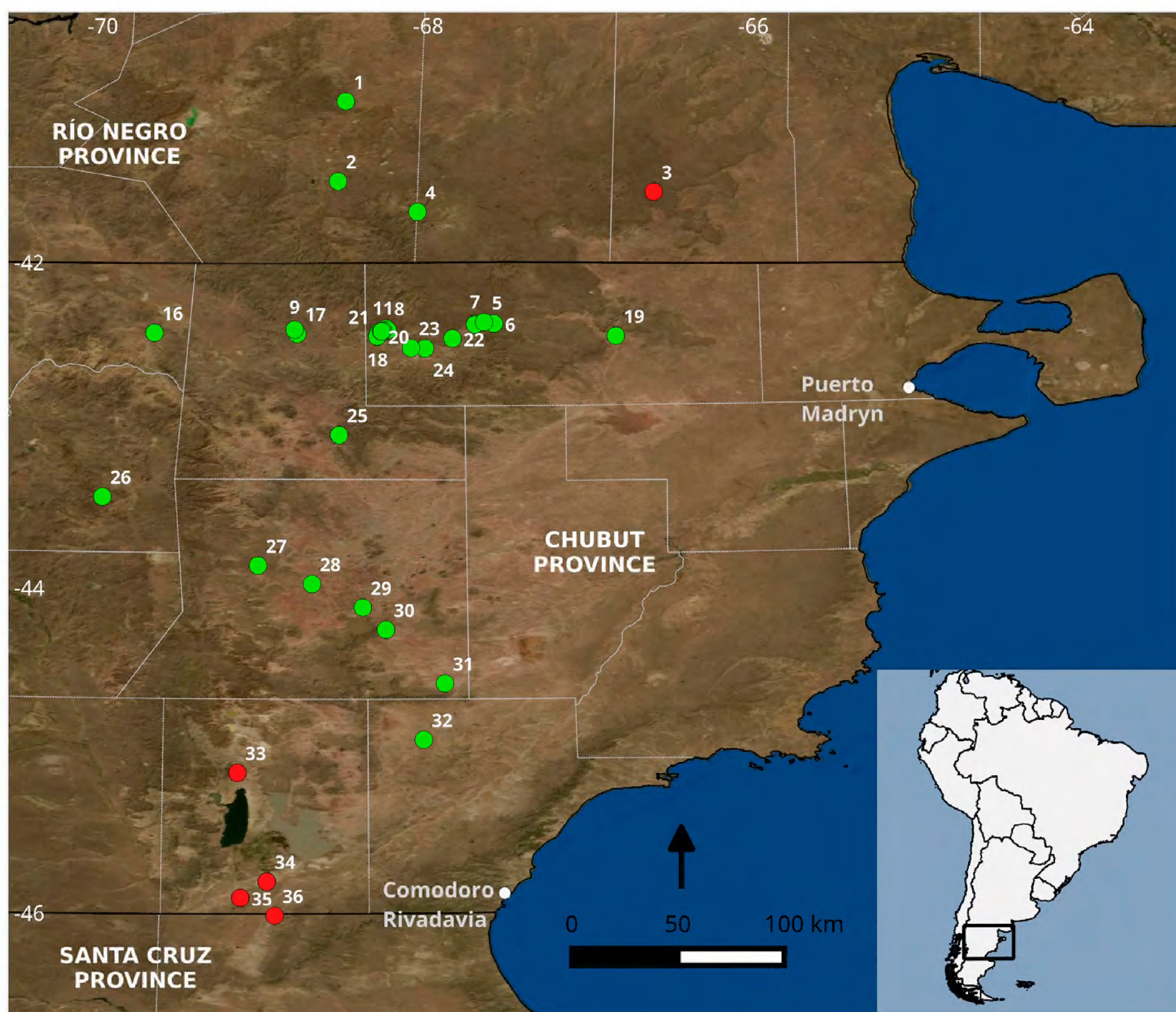


Figure 2. Geographic distribution for *Pristidactylus nigroiugulus* in central Patagonia, and location within Argentina (inset). Green dots: previous bibliographic records for the species in Río Negro and Chubut provinces cited in Avila et al. (2003) and Minoli and Avila (2011). Almost all records are specimens deposited at LJAMM-CNP collection and revised for this study. Red dots: new localities found in this study. Detailed information about all this records are included in the Appendix. Black lines are provincial limits. White dots: main towns, for reference.

for insects. Despite poor preservation, we identified the specimen as *P. nigroiugulus*. All specimens are stored at LJAMM-CNP collection that belongs to IPECC-Centro Nacional Patagónico (CENPAT-CONICET), Puerto Madryn, Argentina. All specimens studied are in Table 1.

The first collected specimen is an adult female (SVL = 100.74 mm, total length (TL) = 214.2 mm, LJAMM-CNP 14908) found basking on a small basaltic hill on 13 December 2012 in the region known as Zanjón del Valle Hermoso, 14 km southeast of Anticlinal Grande Base Camp of Pan American Energy Oil Company, along the road to Meseta 14 Camp (46°01'00.9" S, 068°56'41" W, WGS84, 397 m elevation), Deseado department, Santa Cruz province, by L.J. Avila and M. Morando (Figure 2, Locality 36). A second adult female (SVL = 103.15 mm, TL = 213.56 mm, LJAMM-CNP 14934), collected on 14 December 2012, was

found basking on the west edge of an unpaved road 25 km south of Colonia Sarmiento by the road to Cerro Gaucho, 1 km north of the junction to Area Natural Protegida Bosque Petrificado Sarmiento (45°54'28.4" S, 069°09'18.9" W, WGS84, 456 m elevation), Sarmiento department, Chubut, by L.J. Avila and M. Morando (Figure 2, Locality 35). A third specimen (LJAMM-CNP 15333), a non-sexed juvenile, was found dead in a pitfall trap for insects installed on the southern side of Ruta Nacional 26 (45°48'28" S, 068°59'32" W, WGS84, 413 m elevation), 20 km southwest of the junction with Ruta Provincial 20, Sarmiento department, Chubut province (Figure 2, Locality 34). The exact date of capture of this individual is unknown because the traps were checked each week; this lizard was found on 20 January 2013. Its preservation allows identification but not accurate measurements. During the second field trip

to the south-central mountain ranges of Chubut, we collected on 12 October 2013, a male (SVL = 102.12 mm, TL = 217.98 mm, LJAMM-CNP 15588) on a rocky escarpment at Sierra del Castillo, in La Juanita Ranch, 5 km west of Ruta Provincial 24, 58 km north of Sarmiento (45°08'20.1" S, 069°10'23.9" W, WGS84, 416 m elevation, Figure 2, Locality 33).

We made an extensive review of the LJAMM-CNP collection and we found a specimen of *P. nigroiugulus* (LJAMM-CNP 3308) collected on 1 November 2005 on the southern slopes of the Somuncurá Plateau. It was collected on a road to Somuncurá Plateau, 14.5 km northwest of Luis Ovejero post, Valcheta department, Río Negro province (41°33'57.2" S, 066°36'45" W, 975 m) (Figure 2, Locality 3). This record represents a significant range extension. The specimen is a female (SVL = 81.59 mm, TL = 180.89 mm).

Pristidactylus nigroiugulus differs from all other species of the genus by the male dorsal pattern that is green or brownish green, without lateral markings. The adult female dorsal pattern has transverse indented dark bands, often broken into regular bands of dark dots, and distinctive dark horseshoe-shaped marks across the head. Ventrally both sexes are whitish, but with a nearly triangular black spot on the throats of males (CEI et al. 2001).

Our new records, shown in Figure 2, extend significantly the known geographic distribution of *P. nigroiugulus* in southern and central Chubut. These records include the first from Sarmiento department, and add *P. nigroiugulus* to the herpetofauna of Santa Cruz province. Here, we extend the known distribution of this species by at least 120 km south and 80 km southeast from previous records in the upper Río Chico river valley region. The specimen from Río Negro province represents the species' easternmost known occurrence anywhere (80 km northeast from the type locality) and the first record in Valcheta department. All new occurrence record extended the species' distribution to the edges of the central Patagonian volcanic plateaus and related mountain ranges. Continuous new records of this species demonstrates how little is known about the lizard fauna of Patagonia. Vast regions still inadequately or unsurveyed.

ACKNOWLEDGEMENTS

We thank L. Elizalde for donation of the lizard collected in her pitfall trap. Financial support for fieldwork was provided by Pan American Energy Oil Company through Estudios y Servicios Ambientales Company and FONCYT PICT 0784 and 1397-2011. All lizards were collected under permits of fauna authorities of Chubut (Fauna and Flora Direction, Aut. Prov. 20/2012 issued to Ambiental SRL, unnumbered collections permits 2012/13 issued to the first and last authors) and Santa Cruz provinces (Consejo Agrario, Permit 2012, issued to Ambiental SRL).

LITERATURE CITED

- AVILA, L.J., M. MORANDO & C.H.F. PÉREZ. 2003. New records and natural history notes for *Pristidactylus nigroiugulus* Cei, Scolaro & Videla, 2001 from Río Negro and Chubut provinces, Argentina. *Herpetozoa* 16: 83–86. http://www.zobodat.at/pdf/HER_16_1_2_0083-0086.pdf
- CEI, J.M., J.A. SCOLARO & F. VIDELA. 2001. The present status of Argentinean Polychrotidae species of the genus *Pristidactylus* and description of its southernmost taxon as a new species. *Journal of Herpetology* 35(4): 597–605.
- CEI, J.M., J.A. SCOLARO & F. VIDELA. 2004. An updated biosystematics approach to the leiosaurid genus *Pristidactylus*. *Bollettino del Museo Regionale di Scienze Naturali di Torino* 20: 291–314.
- MINOLI, I. & L.J. AVILA. 2011. Reptilia, Squamata, Iguania, Leiosauridae, *Pristidactylus nigroiugulus*, Cei, Scolaro and Videla 2001: new records for Chubut province and geographic distribution map. *Check List* 7(4): 404–406. doi: [10.15560/7.4.404](https://doi.org/10.15560/7.4.404)
- POUGH, F.H., R.M. ANDREWS, M.L. CRUMP, A.H. SAVITZKY, K.D. WELLS & M.C. BRANDLEY. 2015. *Herpetology*. Sunderland: Sinauer Associates. 591 pp.
- SCOLARO, J.A. 2005. *Reptiles Patagónicos: sur. Guía de Campo*. Trelew: Universidad Nacional de la Patagonia. 80 pp.
- SIMMONS, J.E. 2002. *Herpetological collecting and collections management*. Society for the Study of Amphibians and Reptiles, *Herpetological Circular* 31: 1–154.

Author contributions: LJA, IM, CHFP, AGM and MM, collected the specimens, study material processing, made the identification, and wrote the text.

Received: 5 May 2016

Accepted: 14 October 2016

Academic editor: Raúl Maneyro